PDB19

PATIENT-REPORTED FREQUENCY, AWARENESS AND PATIENT-PHYSICIAN COMMUNICATION OF HYPOGLYCAEMIA IN BELGIUM

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OBJECTIVES: Hypoglycaemia, a common side effect of insulin therapy, can act as a barrier to optimal diabetes management and has a negative impact on patients' quality of life. However, there are few data on the frequency of hypoglycaemic events outside clinical trials. **METHODS:** Type-1 (T1) and insulin-treated type-2 (T2: basal only, T2BOT; basal-bolus, T2BB; and other regimen, T2O) diabetes patients > 15 years old were recruited via existing panels in Belgium to complete four questionnaires at weekly intervals. In addition to demographics, data were collected on the frequency of non-severe hypoglycaemic events (NSHE), hypoglycaemia awareness and reporting of hypoglycaemia to physicians with a 7-day recall period. NSHE was symptoms of hypoglycaemia, with or without blood glucose measurement (BGM), or low BGM without symptoms, which the patient could manage without assistance. **RESULTS:** In total, 412 patients (44% T1, 56% T2) completed 1148 patient-weeks. Mean insulin-treatment duration was 11 years, mean HbA_{1c} 7.7%. Mean NSHE per patient-week were 2.3 in T1 patients, 0.3 in T2BOT, 0.7 in T2BB and 0.8 in T2O patients. Nocturnal NSHE accounted for 19% of T1 events, and 13% (T2BOT), 23% (T2BB) and 27% (T2O) of T2 events. Impaired awareness or unawareness of hypoglycaemia was reported by 72% of T1, 67% of T2BOT, 66% of T2BB and 74% of T2O patients. Overall, 60% of T1 patients and 46% of T2 patients rarely/never discuss hypoglycaemia with their GP/specialist. In addition, 10% of T1 patients and 13% of T2 patients stated that GPs/specialists did not ask them about their hypoglycaemia in routine appointments. **CONCLUSIONS:** NSHE are a common occurrence amongst insulin-treated patients in Belgium. As many patients do not often report their hypoglycaemia to their GP/specialist, the real-world rates may be underestimated. Many patients also reported an impaired or unawareness of hypoglycaemia, which may increase the risk of hypoglycaemic events.

PDB20

TRENDS IN PREVALENCE, AWARENESS, TREATMENT, AND CONTROL OF DIABETES IN THE UNITED STATES, 1999-2010

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OBJECTIVES: To examine progress in treating and controlling diabetes among U.S adults aged 20 years and older from 1999-2010. **METHODS:** Cross-sectional study of National Health and Nutrition Examination Survey (NHANES) 1999-2010, representing the civilian, noninstitutionalized population of the U.S. Diabetes was defined as fasting plasma glucose of at least 126mg/dl, HbA1c of at least 6.5%, self-reported use of antidiabetic medications or insulin, self-reported awareness of diabetes, or both. Glycemic control was defined as HbA1c less than 7%. All survey periods were age-adjusted to the year 2000 US population. **RESULTS:** Prevalence of diabetes increased from 8.5% (95% CI, 7.1-9.9%) in 1999-2000 to 11.1% (95% CI, 9.8-12.4%) in 2009-2010 (P<.001). Glycemic Control increased from 38.1% (95%CI, 24.5-51.7%) in 1999-2000 to 56.7% (95%CI, 48.1-65.2%) in 2009-2010 (P=0.003), and HbA1c level among diabetics decreased from 8.1% (95%CI, 7.4-8.9%) in 1999-2000 to 7.4 % (95%CI, 7.0-7.7%) in 2009-2010 (P=0.02). Improved Glycemic Control reflected improvements in treatment (78.4%; 95%CI, 68.2-88.5%; vs. to 86.7% (95%CI, 82.4-91.0%) overtime (P=0.05), and proportion of patients who were treated and achieved glycemic control (38.1%; 95%CI, 24.5-51.7%; vs. 56.7%; 95%CI, 48.1-65.2%) between 1999-2000 and 2009-2010, across age, race, and sex groups, but was lower among individuals aged 20 to 39 years versus 60 years or older (P=0.01), in Black vs white individuals (P=0.02), and in Hispanic versus white individuals (P=0.003). **CONCLUSIONS:** Diabetes was controlled in an estimated 56.7% of all patients with diabetes in NHANES 1999-2010, with most of the improvement between 1999-2000 and 2003-2004. Glycemic control was significantly lower among younger than older adults, Black vs white, and Hispanic vs white individuals.

PDB21

DISTRIBUTION OF PEOPLE WITH DIABETES ACCORDING TO BODY MASS INDEX CATEGORIES AMONG ADULTS IN CHINA: BASED ON LITERATURE REVIEW

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OBJECTIVES: To analyse the relationship between prevalence of diabetes and Body Mass Index (BMI) and the distribution of people with diabetes among different BMI categories in Chinese adults. **METHODS:** Systematic review was conducted in China National Knowledge Infrastructure (CNKI) from 2006 to 2012. "Diabetes" and "BMI" were used as keywords. Inclusion criteria were studies that reported diabetes prevalence according to BMI categories. Exclusion criteria were studies that population were not adults or sample sizes were less than 1000. Underweight, normal, overweight and obesity were defined using the recommended Chinese BMI cut-off points of <18.5, 18.5-24, 24-28, >=28. Non-linear regression in STATA was used to analysis the relationship between prevalence of diabetes and BMIs. Prevalence of diabetes were adjusted from existing data which was conducted according to WHO' BMI classification criteria (<18.5, 18.5-25, 25-30, >=30) to meet Chinese BMI criteria, based on two nationwide representative studies of Yang *et al.* and Chinese Center For Disease Control And Prevention (CDC). Numbers of people with diabetes among BMI categories were calculated based on Chinese population. Sensitivity analysis was conducted. **RESULTS:** Twenty-three articles were selected, 8 of them met the eligibility criteria. Prevalence of diabetes increased with BMI and exponential regression model fit best. Yang et al. reported the prevalence of diabetes were 4.5%, 7.6%, 12.8%, 18.5% according to WHO's definition of underweight, normal, overweight and obesity respectively. The prevalence of diabetes were estimated to be 4.50%, 7.26%, 11.53%, 15.95% after adjusting by Chinese definition. Therefore, Chinese adults with diabetes were estimated to be 4.35 million, 35.13 million, 35.70 million and 19.36 million respectively. Sensitivity analysis showed the non-linear regression model was robust. **CONCLUSIONS:** Prevalence of diabetes increase exponentially with BMI. Approximately 55 million adults with diabetes are overweight and obesity in China. Body weight control should be a priority in the prevention and management of diabetes.

PDB22

ANTIDEPRESSANT USE AND THE RISK OF INCIDENT DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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OBJECTIVES: To assess the risk of incident diabetes associated with antidepressant use among adults. **METHODS:** A systematic literature search was conducted to identify relevant studies in seven different electronic databases (PubMed, CINAHL, Cochrane Library, Dissertation Abstracts International/ Proquest, Web of Science, Scopus, PsycINFO) along with cross-referencing from selected studies. Two independent reviewers identified the final studies to be included in the meta-analysis based on the following criteria: 1) observational studies; 2) adults ≥ 18 years of age; 3) antidepressant utilization; 4) published and unpublished (dissertations and Master's theses) studies; 5) English language studies only; 6) studies published from the inception of the respective databases to November 26, 2012; 7) minimum follow-up of 12 months from the start of antidepressant use. The primary outcome was incident diabetes. Random-effects models were used to determine the relationship between antidepressant use and incident diabetes. Incident diabetes was measured among individuals with no prior history of diabetes. Presence of diabetes was assessed by any of the following: self-report, physician diagnosis, ICD-9-CM code of 250.xx, fasting (>110mg/dl) and post-prandial (>140mg/dl) blood glucose measures, HbA1C value ≥7%, new prescription of oral antidiabetic medications or insulin. Egger's regression test and Trim and Fill tests were used to detect the presence of any potential publication bias. Sensitivity analysis was conducted using the leave-one-out method. **RESULTS:** Eight studies met the inclusion criteria. Random-effects models revealed that adults using antidepressants were more likely to develop diabetes compared to those not using antidepressants (Odds Ratio=1.50, 95% CI-1.08-2.09; Hazards Ratio=1.20, 95% CI-1.08-1.34). Sensitivity analyses revealed fair robustness. Results from the Egger's regression test and Trim and Fill method revealed no evidence of publication bias. **CONCLUSIONS:** Among adults, antidepressants are associated with the risk of developing incident diabetes. Further cause-and-effect studies are needed to confirm this association.

PDB23

TREATMENT RELATED SEVERE HYPOGLYCAEMIA RISK IN DIABETES TYPE-1 AND TYPE-2–A SYSTEMATIC REVIEW OF OBSERVATIONAL STUDIES

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OBJECTIVES: Severe (requiring assistance from another individual) hypoglycaemic events (SHEs) are important from both clinical and economic perspective. The aim was to assess SHEs risk related to major drug groups in type 1 and 2 diabetes (T1, T2) in real-life settings. **METHODS:** We systematically reviewed Medline, EMBASE and Cochrane databases for recent (<10 years), large (n ≥100) observational studies for drugs associated with higher SHEs risk by available guidelines (IDF, ADA, EASD) – i.e. insulins and sulphonylureas. We extracted number of SH events and patients experiencing at least one, number of participants and time horizon. Using a random effects Poisson model within MCMC framework we estimated the annual SHEs rates whenever the heterogeneity and number of studies allowed a reasonably credible estimate. **RESULTS:** Search strategies yielded 5220 studies, 525 full texts were analysed, and 43 were finally enrolled: 15 regarding long-acting insulin analogues (LAA), 13 – pumps, 21 – other insulins (OI), 9 – sulphonylureas. Full texts were rejected mostly due to: inappropriate SHE definition, patients using a mixture of treatments, no precise treatment definition. We obtained the following ranges for SHE rates in individual studies. For T1: LAA (n=13, 0.10-1.47), pumps (n=17, 0-0.58), OI (n=12, 0.20-1.26). For T2: LAA (n=5, 0-0.98), OI (n=10, 0-0.59), OI + sulphonylureas (n=4, 0-0.59), OI + other OADs (n=8, 0-0.72), sulfonylureas (n=6, 0-0.11). Pooled data suggest the following mean annual SHE rates (95%CI). For T1: LAA 0.54 (0.33-0.88), pumps 0.17 (0.11-0.25), OI 0.67 (0.36-1.26). For T2: OI 0.34 (0.07-0.68), sulfonylureas 0.06 (0.02-0.15). **CONCLUSIONS:** SHEs risk differs for T1, T2 and available drugs. However SHEs frequency may not seem large, the fear of such an event, its danger and economic consequences may be an important issue in managing diabetes. Limited availability of studies and heterogeneity of data make it difficult to come up with precise rate estimation.

DIABETES/ENDOCRINE DISORDERS – Cost Studies

PDB24

BUDGET IMPACT ANALYSIS OF THE INTRODUCTION OF SAXAGLIPTIN/METFORMIN EXTENDED-RELEASE (XR) IN THE TREATMENT OF TYPE-2 DIABETES IN CHILE